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REMARKS

Claims 1-5, 7, 28-30, 35 and 36 are currently pending in the subject application and are presently under consideration. Claims 8-27 and 31-34 are withdrawn. Claim 37 has been added and claim 6 has been cancelled. A listing of the claims can be found on pages 2-8 of this Reply. Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 1-5, 28-30, 35 and 36 Under 35 U.S.C. §103(a)

Claims 1-5, 28-30, 35 and 36 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Moslehi (US 5,270,222) in view of Gevelber *et al.* (US 6,162,488) (hereinafter Gevelber). It is respectfully submitted that this rejection should be withdrawn for at least the following reasons. Neither Moslehi nor Gevelber, individually or in combination, teach or suggest all limitations of the subject claims.

To reject claims in an application under §103, an examiner must establish a *prima facie* case of obviousness. A *prima facie* case of obviousness is established by a showing of three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §706.02(j).

Independent claim 1 (and similarly independent claims 28, 35 and 36) recites *a non-linear training system that determines thin film deposition parameter adjustments to one or more deposition components according to reflected light data associated with deposited thin film*. Specifically, the system utilizes reflected light to detect structural irregularities (e.g., pinhole, air bubble, depression) by comparing measured signatures generated from light reflected by the thin film to a database of desired signatures. In this manner, the reflected light data provides feedback control of the deposition process. Moslehi and Gevelber, individually and in combination, do not teach or suggest such features of the claimed invention.

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In the Office Action dated April 28, 2004, the Examiner concedes that Moslehi does not teach or suggest a processor that determines deposition parameter adjustments to one or more deposition components and cites Gevelber to teach this limitation. The Examiner contends that such limitations are found in column 16, lines 2-22 and column 17, lines 56-65 of Gevelber. However, these sections are not directed to utilizing reflected light data to determine thin film parameter adjustments to one or more deposition components, as recited in the subject claims. Instead, column 16, lines 2-22 is directed to determining which input actuator to utilize based on coating performance specifications; and column 17, lines 56-65 is related to employment of non-linear control. Thus, these sections individually and/or in combination do not teach or suggest *determining thin film deposition parameter adjustments to one or more deposition components* let alone *via* a non-linear training system as in applicants' claimed invention.

In addition, there is no teaching or suggestion of *collecting light* reflected from deposited thin film, as recited in the subject claims. The Examiner contends that column 10, lines 13-16 of Moslehi teach this limitation. However, this section of Moslehi is not directed to *collecting light* reflected from the deposited thin film. Instead, this section discloses the power of a coherent beam of light that is directed to and reflected from a surface. There is no teaching or suggestion, implicitly or explicitly, that the power of the laser is determined by *collecting* such reflected light. Laser power can be determined *via* numerous methods that do not involve the collection of light such as mathematical, geometric and physical properties of the coherent light source and the surface off of which such light is reflected. Thus, Moslehi does not teach or suggest *collecting reflected light* as recited in the subject claims. Furthermore, Moslehi does not teach or suggest the analysis of such light since Moslehi does not teach or suggest the collection of reflected light for such a purpose.

It appears the Examiner is taking disparate sections of Moslehi, out of context, in an attempt to reconstruct the claimed subject invention. For instance, the Examiner cites a section that simply discloses *reflected light* to read on the limitation collection of reflected light when the section referenced does not disclose such a collection. In addition, the Examiner cites disparate and unrelated sections of Moslehi that disclose a monitoring system (col. 5, lines 52-65) in one section which is unrelated to a thin film (col.20, line 65 - col.21, line 5) in another section. The Examiner contends that this combination of sections disclose a monitoring system

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employed to detect structural irregularities (*e.g.*, pinhole, air bubble, depression) associated with the deposited thin film. However, the first section is related to conventional fabrication environments which monitor only non-structural data such as process pressure, gas flow rates and substrate temperature. Such conventional methods are not employed to detect structural irregularities let alone detect such irregularities associated with a thin film. The second section does not even mention structural irregularities and further does not mention such irregularities associated with a deposited thin film. Thus, there is no relationship in Moslehi between detecting structural irregularities and a thin film, as recited in the subject claims.

It appears the Examiner is improperly picking and choosing elements required to reconstruct the subject invention wherein such elements are unrelated in the prior art and taken out of context. “[I]t is impermissible to use the claimed invention as an instruction manual or ‘template’ to piece together the teachings of the prior art so that the claimed invention is rendered obvious. ... This court has previously stated that ‘[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.’” *In re Fritch*, 972 F.2d at 1266, 23 USPQ2d at 1784 (Fed. Cir. 1992). “One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988).

Moreover, Moslehi does not teach or suggest employing scatterometry means to analyze reflected light to determine one or more properties of the thin film, as recited in claim 28. The Examiner contends that such a limitation is disclosed in column 10, lines 40-50 of Moslehi. However, this section is not directed to employing scatterometry means to *analyze* reflected light to determine one or more properties of thin film. Instead, this section describes the various parameters (*e.g.*, power, angle, wavelength) associated with the *behavior* of coherent light that is reflected off a surface. Such behavior is a well-known physical phenomena and Moslehi merely describes the *behavior* of such coherent light. Thus, Moslehi does not mention employing scatterometry means to *analyze* reflected light to determine one or more properties of thin film, as recited in the subject claim.

Additionally, Moslehi does not teach or suggest controlling the deposition of thin film via utilizing a processor to *control at least one deposition component based at least in part on data received from the scatterometry system*, as recited in claim 30 (and claim 37). The Examiner

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contends that two sections of Moslehi teach this aspect of the subject claim. However, the first section, column 9, lines 22-28, relates to the *control of a deposition process based on a "wafer temperature sensor and a sheet resistance sensor"* and not a scatterometry system as recited in the subject claim. The second section, column 10, lines 40-58, is unrelated and is directed to a coherent laser beam emitted at a semiconductor wafer wherein a portion of such laser is scattered and reflected off a semiconductor surface and a portion of the laser is transmitted through the semiconductor surface. As such, this laser beam is not employed to control any process let alone a deposition process, as recited in the subject claims. Thus, these sections individually and in combination do not teach or suggest controlling thin film deposition *based at least in part upon data received from a scatterometry system*.

At most the cited sections teach a system that "controls the operation of [a] CVD metal module" (See col. 9, ll. 24-27) which is not based on data received from a scatterometry system as recited in the subject claims. Moslehi teaches control of a deposition component (e.g., CVD metal module) that relies solely on temperature and sheet resistance information provided by temperature and sheet resistance sensors. (See Id.). Thus, as disclosed in Moslehi, there is no correlation between control of a deposition process and coherent laser light that reflects off a semiconductor surface, as recited in the subject claims.

For at least these reasons, the subject invention as recited in independent claims 1, 28, 35 and 36 (and claims 2-7 and 29-30 which depend therefrom) is not obvious over the cited references, and this rejection should be withdrawn.

II. Rejection of Claim 7 Under 35 U.S.C. §103(a)

Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Moslehi in view of Gevelber further in view of Robinson *et al.* (US 5,629,137). Withdrawal of this rejection is respectfully requested for at least the following reasons. Claim 7 depends on independent claim 1 and Robinson *et al.* does not make up for the aforementioned deficiencies of Moslehi and Gevelber. Accordingly, this rejection should be withdrawn.

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III. Conclusion

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 (Ref. AMDP630US).

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

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